

## CLAIMS

1. An optical add/drop amplification device (1) for arrangement between fibre spans (2, 3) in an optical telecommunications system, comprising: a first input amplifier (4); a channel add/drop device (7) coupled to the first input amplifier (4); an output amplifier (8) coupled to the channel add/drop device (7), the input amplifier (4) being arranged to produce substantially constant output power, such that the output power of amplified spontaneous emission noise compensates in use for loss of signal power in the event of breakage of a fibre span (2), to ensure survival of any channels added at the add/drop device, characterised by an additional input amplifier (9) which is arranged to provide the compensating amplified spontaneous emission in the event of failure of the first input amplifier (4).
2. An optical add/drop amplification device (1) as claimed in claim 1, in which the additional input amplifier (9) is connected to the first input amplifier (4), and is arranged to operate in response to failure of the first input amplifier.
3. An optical add/drop amplification device (1) as claimed in claim 2, in which the additional input amplifier (9) is arranged to switch on when it fails to detect any optical power from the first input amplifier (4).
4. An optical add/drop amplification device (1) as claimed in claim 3, in which a photodiode (11) of the additional input amplifier is arranged to sense light from the monitor output (12) of the first input amplifier (4).

5. An optical add/drop amplification device (1) as claimed in any one of claims 1 to 4, in which the output power of the additional input amplifier (9) is set so that when it is switched on, it will give the same output power as that previously produced by the first input amplifier (4) and arranged to produce a substantially constant output power.
6. A method of ensuring survival of channels added at an optical add/drop amplification device arranged between fibre spans in an optical telecommunications system, in which amplified spontaneous emission noise produced in an input amplifier of the amplification device is used to compensate for loss of signal power in the event of breakage of a fibre span, to ensure survival of any channels added at the add/drop device, characterised by producing the compensating noise in an additional input amplifier in the event of failure of the input amplifier.
7. A method of ensuring survival of channels as claimed in claim 6, and comprising the additional input amplifier sensing light from the monitor output of the input amplifier.

